In the Claims:

1. (Currently amended) A method of welding comprising ~~the steps of~~:

during welding, identifying a transition between a first mode of operation during which no spatter is produced, and a second mode of operation during which ~~a minimal~~ some amount of spatter is produced; and

adjusting a power supply voltage ~~whereby~~ such that welding occurs under conditions associated with said transition; ~~whereby~~

wherein ~~said step of~~ identifying said transition comprises identifying near zero voltage fluctuations in said power supply voltage.

2. (Original) The method as claimed in claim 1 further comprising automatically adjusting said power supply voltage.

3. (Currently amended) The method as claimed ~~in any one of claims 1 or claim 2 further comprising~~ in claim 1, wherein adjusting said power supply voltage comprises continually adjusting said power supply voltage.

4. (Currently amended) The method as claimed ~~in any one of claims 1 to 3 further comprising performing a whole welding process under said conditions~~ in claim 1, wherein welding comprises a whole welding process under said conditions.

5. (Currently amended) The method as claimed in claim 1, ~~any one of claims 1 to 4~~ further comprising: ~~the steps of;~~

monitoring near zero power supply voltage signals during welding; and

determining when an onset of near zero voltage fluctuations occurs, said onset indicating a transition from said first to said second mode of operation.

6. (Currently amended) The method as claimed ~~in any one of claims 1 to 5 comprising a method of~~ in claim 1, wherein welding comprises pulsed metal inert gas (MIG) welding.

7. (Currently amended) A method of welding comprising ~~the steps of~~:

during a welding process, identifying near zero voltage fluctuations in a power supply voltage; and

responsive to the detection of said fluctuations adjusting said power supply voltage.

8. (Original) The method as claimed in claim 7 further comprising automatically adjusting said power supply voltage.

9. (Currently amended) The method as claimed in claim 7 ~~or claim 8~~ further comprising continually adjusting said power supply voltage.

10. (Currently amended) The method as claimed in claim 7 ~~any one of claims 7 to 9~~ further comprising:

during welding adjusting said power supply voltage responsive to variations in weld set up conditions.

11. (Currently amended) The method as claimed in claim 7, wherein welding comprises ~~any one of claims 7 to 10 comprising a method of~~ pulsed metal inert gas (MIG) welding.

12. (Currently amended) A welding ~~Welding~~ apparatus for providing predetermined weld conditions during a welding process comprising:

a main electrode for forming molten metal and an arc between the electrode and a work target;

a power supply arranged to supply a power supply voltage to said electrode;

means for identifying a transition, during welding, between a first mode of operation and a second mode of operation; and

means for adjusting the power supply voltage whereby welding occurs under conditions associated with said transition; wherein said means for identifying a transition comprises means for identifying near zero voltage fluctuations in the power supply.

13. (Canceled)

14. (Canceled)